Use Attainability Analysis

for

WBID 0349 Pigeon Creek

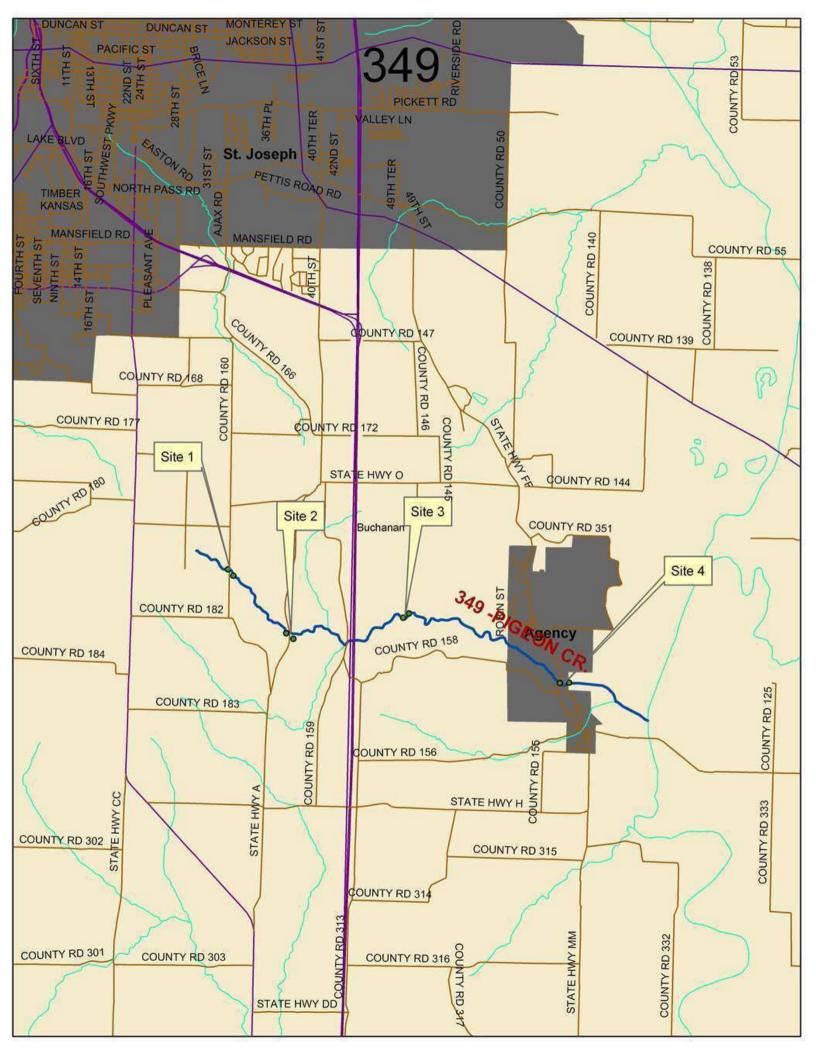
Submitted by SES Inc.

to Missouri Department of Natural Resources Water Protection Program

Date received: November 14, 2007

Data Sheet A - Water Body Identification

| I. Water Body Information (For water body being | ng surveyed) |
|---|--|
| Water Body Name (from USGS 7.5' quad): | Pigeon Cr. |
| Missouri Water Body Identification (WBID) Number: | 349 |
| 8 digit HUC code: 10240012 | County: Buchanan |
| Upstream Legal Description (from Table H): | T56N R35W SEC15 |
| Downstream Legal Description (from Table H): | T56N R34W SEC21 |
| Number of sites evaluated: 4 | |
| List all site numbers, listed consequently upstream to d 1, 2, 3, 4 | ownstream: |
| Site Locations Map(s): Attach a map of the entire seg Mark any other items that may be of interest. II. Facility Information (list all permitted discharges to | · |
| Facility Name(s) and Permit Number(s): | , |
| St Joseph Sani Landfill | |
| MO0109878 | |
| III. UAA Surveyor (please print legibly) Name of Surveyor: Gilisa Gould | Telephone Number: 9133070054 |
| , | Telephone Number. 3133070034 |
| Organization/Employer: SES, Inc. | |
| Please verify that you have completed all sections, complete. | checked all applicable boxes, and that the form is |
| Signed: Gilisa Gould | Date:11.08.07 |



| WBID# | 349 |
|--------|-----|
| Site # | 1 |

Data Sheet B-Site Characterization

| Date & Time: | 10.8.07 | 4:30 | | Site Location | on Descrip | tion (e.g. road | crossing): | |
|---------------|------------|----------------------|---------------------------------------|-------------------|--------------|-----------------|---------------|---------|
| Personnel: | G. Gou | ld and L. Brown | | | 160 road | crossing | | |
| Current Weat | her Cond | ditions: clear | | Facility Nar | ne: | St. Joseph Sa | ani Landfill | |
| Weather cond | litions fo | r the past 10 days:0 | .96 inches | Permit Nun | nber: | MO0109878 | | |
| Drought cond | itions?: N | No drought ☑ ; Pha | se I □ ; Phase | II □ ; Phas | e III □ ; PI | nase IV □ ; Ur | nknown 🗆 | |
| | | - | | | | | | |
| Site Location | | | | | | | | |
| | | (Universal Transver | se Mercator Pi | rojection, In | Meters | | | |
| Site 01 | Easting | ı (UTM X): | Northing (UTN | И Y): | | Horizontal Ac | curacy: | Meters |
| | | 0344455 | | 4392532 | | | | 7.62 |
| Site 11 | Easting | ı (UTM X): | Northing (UTN | М Y): | | Horizontal Ac | curacv: | Meters |
| | | , | , , , , , , , , , , , , , , , , , , , | 4392458 | | | , , , | 8.5 |
| | | 0344554 | | 4392430 | | | | 8.5 |
| Photos: | | | _ | | | _ | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | D#: Photo Purpose | | Photo ID#: | Photo Pu | rpose |
| 5 | | upstream | 6 | downstrear | n | | | |
| | | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo Purpose | | Photo ID# | Photo Pu | rpose |
| | | | | | | | | |
| | | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Pu | rpose |
| | | | | | | | | |
| | | | | | | | | |
| Uses Observ | ed: | | | | | | | |
| ☐ Swimming | | ☐ Skin diving | ☐ SCUBA di | iving | ☐ Tubin | a | ☐ Water Skiin | a |
| ☐ Wind surfi | ng | ☐ Kayaking | ☐ Boating | | □ Wadir | | ☐ Rafting | <u></u> |
| ☐ Hunting | <u> </u> | ☐ Trapping | ☐ Fishing | | | of the above | ☐ Other: | |
| Describe: | | п парріпу | L I ISIIIII | | E None | of the above | other. | |
| | | | | | | | | |
| | | | | | | | | |

| WBID# | 349 |
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| Site # | 1 |

Data Sheet B- Site Characterization (Continued)

| Surrounding Condition | ions: | | | | | |
|---------------------------|---------------------|--|-----------------|-----------------|----------------|------------|
| ☐ City/County parks | ☐ playgrounds | ☐ MDC con | servation lands | □ Urban areas | ☑ Rural Re | esidential |
| ☐ Campgrounds | ☐ State parks | ☐ National I | Forests | ☐ Nature trails | ☐ Stairs/w | alkways |
| □ Boating accesses | ☐ Fence | □ No tressp | ass sign | ☐ Steep Slopes | of other: | |
| Comments: | | | | | | |
| construction | on on road crossing | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Evidence of Human | llee. | | | | | |
| □ Roads | ☐ Foot path/prints | ☐ Dock/platf | form | ☐ Camping Site | es | /inas |
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | □ NPDES D | | ☐ Fishing Tack | | |
| comments/other: | 1 - 1 2 2 3 | <u>, </u> | | <u> </u> | | |
| none | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Substrate: | | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % Mud/Clay | % Bedrock | |
| 70 CODDIE | /0 Glavei | /0 Janu | 100 | /0 Midd/Clay | /0 Deditory | |
| | | | 100 | | | |
| Aquatic Vegatation: | | | | | | |
| | | | | | | |
| none | | | | | | |
| | | | | | | |
| | | | | | | |
| Water Characteristic | | | | | | |
| | | ☐ Musky | ☐ Chem | -: | ✓ None | ☐ Other: |
| Odor: | ☐ Sewage ☑ Clear | □Green | □ Cnem | 1lCai | ☑ None ☑ Milky | ☐ Other: |
| I('olor: | | | 1 1 1 21 71 7 | | V IVIIII V | |
| Color: Bottom Deposit: | ☐ Sludge | □ Solids | | sediments | ☑ None | ☐ Other: |

| WBID#_ | 349 |
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| Site # | 1 |

Data Sheet B - Site Characterization (continued)

| | Morphology: (Record isolate | ed pools or other feat | ures identified durina | the survey that may suppo | ort recreational uses) |
|---------------------|-------------------------------|------------------------|-----------------------------------|---------------------------|------------------------|
| Channel Feature | Distance from | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
| | access location (m) | | | | |
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| omments: (Please re | ecord any additional comments | here.) | | | |
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| | ou have completed all s | ections, checke | ed all applicable | boxes, and that the | form is |
| omplete. | ou have completed all s | ections, checke | ed all applicable Date of Survey: | | form is |

Position: Field Team Leader

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

| | | | | | | | | | | | | | | | | | | Disso | lved O | xygen | | |
|----------------------------|-----------------|----------------|-----------------|-----------|-----------------|-----------|------------------|-----------|--------------------|-----------|-----------------|-----------|-----------------|----------------------|-----------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | Waterbo | ody ID: | 349 | | - | Site #: | 1 | | | | | | | | | Date: | 10.8.07 | | | Time: | 4:30 | |
| | Estimat | ed Chanı | nel Incisi | on: | 6.0 | (m) (hei | ght betw | een low | bank wic | dth and v | vater) | | | | | D | issolved | Oxygen: | 2.5 | | (mg/L) | |
| | | cation -] | | | | | | | - | | e (EPE / | | | <i>(</i> , ,) | | | | ' | | | | |
| | - | UTM X UTM X | | 0344455 | 4 | | UTM Y: UTM Y: | | 4392532 4392458 | | | +/- | | (meters) (meters) | , | D | issoivea | Oxygen: | | | (% sat) | |
| | Average | e Stream | Width: | | 2 | | | (meters) | L | ength of | Survey S | Segment: | 150 | | (meters) | | Specif | ic Cond: | | | (µS/cm) | |
| | | ermne Le | | | | | | (IIICCIS) | | _ | ige stream | - | | | (ineces) | Wa | iter Tem | perature: | 23.7 | | (°C) | |
| | Fie | ld Staff: | Larissa | Brown a | nd Gilisa | Gould | | | | | | | | | | | | | | | | |
| | | | | | | | | | | Trai | nsect C | ross-Se | ction | | | | | | | | | |
| | (|)1 | (|)2 | 0 | 13 | 0 | 4 | 0 | 15 | 0 | 6 | 0 | 7 | 0 | 8 | 0 | 19 | 1 | 10 | 1 | .1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.1 | 0.01 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.01 | 0.1 | 0.05 | 0.2 | 0.01 | 0.1 | 0.01 | 0.1 | 0.01 | 0.1 | 0.01 | 0.1 | 0.10 | 0.1 | 0.01 |
| 2 | 0.2 | 0.05 | 0.2 | 0.05 | 0.2 | 0.05 | 0.1 | 0.05 | 0.2 | 0.01 | 0.4 | 0.01 | 0.1 | 0.00 | 0.0 | 0.01 | 0.1 | 0.10 | 0.2 | 0.15 | 0.1 | 0.01 |
| 3 | 0.3 | 0.05 | 0.3 | 0.05 | 0.3 | 0.01 | 0.2 | 0.10 | 0.3 | 0.05 | 0.6 | 0.01 | 0.2 | 0.00 | 0.1 | 0.05 | 0.2 | 0.15 | 0.3 | 0.15 | 0.2 | 0.05 |
| 4 | 0.4 | 0.05 | 0.4 | 0.00 | 0.4 | 0.01 | 0.2 | 0.10 | 0.4 | 0.01 | 0.8 | 0.01 | 0.2 | 0.01 | 0.1 | 0.05 | 0.2 | 0.15 | 0.4 | 0.20 | 0.2 | 0.05 |
| 5 | 0.5 | 0.01 | 0.5 | 0.00 | 0.5 | 0.00 | 0.3 | 0.10 | 0.5 | 0.01 | 1.0 | 0.01 | 0.3 | 0.05 | 0.2 | 0.05 | 0.3 | 0.15 | 0.5 | 0.15 | 0.3 | 0.05 |
| 6 | 0.6 | | 0.6 | | 0.6 | | 0.3 | 0.10 | | | 1.2 | 0.01 | 0.3 | 0.10 | 0.2 | | 0.3 | | 0.6 | | 0.3 | |
| 7 | 0.7 | | 0.7 | | | | | 0.05 | 0.7 | 0.01 | 1.4 | 0.01 | 0.4 | 0.10 | 0.3 | | 0.4 | | 0.7 | | 0.4 | |
| 8 | 0.8 | | | | 0.8 | | 0.4 | 0.01 | 0.8 | | | 0.00 | | 0.05 | 0.3 | | 0.4 | | 0.8 | | 0.4 | |
| 9 | 0.9 | | 0.9 | | 0.9 | | | 0.01 | 0.9 | | 1.8 | 0.01 | 0.5 | | 0.0 | | 0.5 | | 0.9 | | 0.5 | |
| Right Bank Feature Type | 1.0 | 1.00 | 1.0 | 0.50 | 1.0 | 0.00 | 0.5 | 0.00 | 1.0 | 0.00 | 2.0 | 0.00 | 0.5 | 1.00 | 0.5 | 0.00 | 0.5 | 0.00 | 1.0 | 0.00 | 0.5 | 0.00 |
| (riffle, run, or pool) | ро | ool | rif | fle | rif | fle | po | ool | rif | fle | rif | fle | rif | fle | рс | ool | po | ool | po | ool | po | ool |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: | Gilisa Gould | Date: | 10/2/07 |
|---------|--------------|-------|---------|
| Cianad. | Cilian Could | Data | 10/2/07 |

| WBID# | 349 |
|--------|-----|
| Site # | 2 |

Data Sheet B-Site Characterization

| Date & Time: | | 10.8.07 | 5:30pm | Site Location | on Descrip | tion (e.g. road | crossing): | | |
|-------------------|---------|---------------------|----------------|--------------------------|--------------|-----------------|----------------|-----|--|
| Personnel: | | L. Brown and G. Go | ould | | Fleming F | Rd crossing | | | |
| Current Weather | r Cond | itions: clear | | Facility Nar | ne: | St. Joseph Sa | ani Landfill | | |
| Weather condition | ons for | the past 10 days:0 | .96 inches | Permit Nun | nber: | MO0109878 | | | |
| Drought condition | ns?: N | lo drought ☑ ; Phas | se I □ ; Phase | II □ ; Phas | e III □ ; Pl | hase IV □ ; Ur | nknown 🗆 | | |
| | | | | | | | | | |
| Site Location: | | | | | | | | | |
| | • | Universal Transver | 1 | - | Meters | | | | |
| | | (UTM X): | Northing (UTN | M Y): | | Horizontal Ac | - | ers | |
| 03 | 345447 | 7 | 4391444 | | | | 7.3 | _ | |
| Site 11 Ea | asting | (UTM X): | Northing (UTN | M Y): | | Horizontal Ac | curacy: Met | ers | |
| 03 | 345577 | 7 | 4391333 | | | | 7.9 | | |
| Photos: | | | | | | | | | |
| Photo ID# | PI | hoto Purpose | Photo ID#: | Photo ID#: Photo Purpose | | | Photo Purpose | | |
| 7 ur | pstrear | n | 8 | downstream | | | | | |
| | | | | | | | | | |
| Photo ID# | Pł | hoto Purpose | Photo ID# | Photo Purpose | | Photo ID# | Photo Purpose | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Photo ID# | Pr | hoto Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | |
| | | _ | | | | | | | |
| | | | | | | | | | |
| Uses Observed | l: | | T | | 1 | | | | |
| ☐ Swimming | | ☐ Skin diving | ☐ SCUBA di | iving | ☐ Tubin | g | ☐ Water Skiing | | |
| ☐ Wind surfing | | ☐ Kayaking | ☐ Boating | | ☐ Wadir | ng | ☐ Rafting | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | ☑ None of the abo | | | □ Other: | | |
| Describe: | | | | | | | | | |
| | | | | | | | | | |

| WBID# | 349 |
|--------|-----|
| Site # | 2 |

Data Sheet B- Site Characterization (Continued)

| Surrounding Condit | ions: | | | | |
|----------------------|--------------------|-------------------|------------------------|------------|----------------------------------|
| ☐ City/County parks | | ☐ MDC conservat | tion lands 🔲 Urba | an areas | ☑ Rural Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forest | | ıre trails | ☐ Stairs/walkways |
| ☐ Boating accesses | · • | ☐ No tresspass si | ign ☑ Stee | p Slopes | ☐ Other: |
| Comments: | | | | <u> </u> | |
| none | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Evidence of Human | | | | | |
| | | | I □ Com | : Citoo | □ Deres eudenge |
| ☐ Roads | ☐ Foot path/prints | ☐ Dock/platform | | ping Sites | ☐ Rope swings |
| □ RV/ATV Tracks | ☐ Fire pit/ring | ☐ NPDES Dischar | 'ge □ Fisiii | ing Tackle | ☐ Livestock watering |
| comments/other: | none | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Substrate: | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % Mud/C | Clay % Bedrock |
| | 10 | ,, , | 40 | 20 | 30 |
| | | | | | |
| Aquatic Vegatation: | · | | | | |
| | | | | | |
| | None | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Water Characteristic | | | | | |
| | ☐ Sewage | □ Musky | ☐ Chemical | | None |
| Odor: | □ Clear | □Green | ☐ Gray | ✓N | //ilky ☑ Other: |
| Odor: Color: | | | | | |
| Color: | | | | | Brown |
| | ☐ Sludge | ☐ Solids | ☐ Fine sediment ☑ Foam | | Brown None □ Other: one □ Other: |

WBID # <u>349</u> Site # <u>2</u>

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses) |
|---|
|---|

| | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|------------------------------------|---|-----------------|------------------------------------|---------------------|---------------|
| | docess location (III) | | | | |
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| | | | | | |
| Comments: (Please red | cord any additional comments h | nere.) | | | |
| none | <u>, , , , , , , , , , , , , , , , , , , </u> | | | | |
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| | ou have completed all so | ∍ctions, checke | ed all applicable | boxes, and that the | form is |
| Please verify that yo complete. | u have completed all so | ections, checke | ed all applicable | boxes, and that the | form is |
| | | | ed all applicable Date of Survey: | | form is |

Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

| | | | | | | | | | | | | | | | | | | Disso | lved Ox | ygen | | |
|------------------|-----------------|-----------|----------------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------------------|-----------------|-----------|-----------------|--------------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | Waterb | ody ID: | 349 | | • | Site #: | 2 | | | | | | | | | Date: | 10.8.07 | | | Time: | 5:30 | |
| | Estimat | ed Chan | nel Incisi | on: | 4.0 | (m) (hei | ght betw | een low b | ank wid | th and wa | iter) | | | | | Di | issolved (| Oxygen: | 0.2 | • | (mg/L) | |
| | 01 | UTM X | : <u> </u> | 0345447 | 7 | . 1 | UTM Y: | | 439144 | 4 | | +/- | 7.3 | (meters) | • | Di | issolved (| Oxygen: | | | (% sat) | |
| | | UTM X | | 034557 | | | | | | | • | +/- | 7.9 | (meters) | • | | Specifi | c Cond: | | | (μS/cm) | |
| | | | Width: ength of I | | | 3 | | (meters) | | ength of 20x avera | | | | 150 | (meters) | Wa | ter Temp | erature: | 22.9 | | (°C) | |
| | Fie | ld Staff: | | | | Larissa | Brown a | nd Gilisa | Gould | | | | | . | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | | 01 | 0 |)2 | 0 | 3 | |)4 | (|)5 | 0 | 16 | (| 07 | 08 | 3 | 0: | 9 | 1 | 0 | 1: | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| eft Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0.1 | 0.05 | 0.1 | 0.01 | 0.2 | 0.01 | 0.2 | 0.20 | 0.1 | 0.01 | 0.2 | 0.01 | 0.2 | 0.01 | 0.1 | 0.01 | 0.2 | 0.01 | 0.2 | 0.05 | 0.2 | 0.30 |
| : | 0.2 | 0.10 | 0.2 | 0.01 | 0.4 | 0.05 | 0.4 | 0.25 | 0.2 | 0.05 | 0.4 | 0.00 | 0.4 | 0.01 | 0.2 | 0.01 | 0.4 | 0.01 | 0.4 | 0.25 | 0.4 | 0.30 |
| : | 0.3 | 0.10 | 0.3 | 0.00 | 0.6 | 0.05 | 0.6 | 0.30 | 0.3 | 0.05 | 0.6 | 0.05 | 0.6 | 0.05 | 0.3 | 0.05 | 0.6 | 0.05 | 0.6 | 0.35 | 0.6 | 0.25 |
| | 0.4 | 0.05 | 0.4 | 0.01 | 0.8 | 0.10 | 0.8 | 0.35 | 0.4 | 0.10 | 0.8 | 0.01 | 0.8 | 0.01 | 0.4 | 0.05 | 0.8 | 0.05 | 0.8 | 0.40 | 0.8 | 0.25 |
| : | 0.5 | 0.05 | 0.5 | 0.01 | 1.0 | 0.10 | 1.0 | 0.30 | 0.5 | 0.10 | 1.0 | 0.00 | 1.0 | 0.01 | 0.5 | 0.10 | 1.0 | 0.05 | 1.0 | 0.40 | 1.0 | 0.20 |
| | 0.6 | 0.05 | 0.6 | 0.05 | 1.2 | 0.10 | 1.2 | 0.20 | 0.6 | 0.05 | 1.2 | 0.00 | 1.2 | 0.05 | 0.6 | 0.10 | 1.2 | 0.05 | 1.2 | 0.25 | 1.2 | 0.25 |
| , | 0.7 | 0.01 | 0.7 | 0.00 | 1.4 | 0.05 | 1.4 | 0.10 | 0.7 | 0.05 | 1.4 | 0.10 | 1.4 | 0.05 | 0.7 | 0.10 | 1.4 | 0.05 | 1.4 | 0.15 | 1.4 | 0.25 |
| : | 0.8 | 0.01 | 0.8 | 0.01 | 1.6 | 0.01 | 1.6 | 0.05 | 0.8 | 0.01 | 1.6 | 0.05 | 1.6 | 0.00 | 0.8 | 0.05 | 1.6 | 0.05 | 1.6 | 0.10 | 1.6 | 0.15 |
| 9 | 0.9 | 0.01 | 0.9 | 0.01 | 1.8 | 0.01 | 1.8 | 0.01 | 0.9 | 0.00 | 1.8 | 0.01 | 1.8 | 0.01 | 0.9 | 0.05 | 1.8 | 0.05 | 1.8 | 0.05 | 1.8 | 0.05 |
| ight Bank | 1.0 | 0.00 | 1.0 | 0.00 | 2.0 | 0.00 | 2.0 | 0.00 | 1.0 | 0.00 | 2.0 | 0.00 | 2.0 | 0.00 | 1.0 | 0.00 | 2.0 | 0.00 | 2.0 | 0.00 | 2.0 | 0.00 |
| eature Type | | | | ~~ | | | | | | | | | | - | | | | _ | | | | |
| ffle, run, or po | ol po | ool | rif | fle | pc | ool | p | ool | po | ool | rif | fle | ri | ffle | po | ol | rif | le | po | ol | po | ol |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: Gilisa Gould Date: 11.08.07 |
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| WBID# | 349 |
|--------|-----|
| Site # | 3 |

Data Sheet B-Site Characterization

| Date & Time: | | 10.9.07 | 10:45 | Site Location | on Descrip | tion (e.g. road | crossing): | | | | |
|---------------|------------|----------------------|-----------------|---------------|--------------|-----------------|-----------------|-------|--|--|--|
| Personnel: | | L. Brown and G. G | ould | Conservati | on Area ro | ad crossing | | | | | |
| Current Weat | her Cond | ditions: clear | | Facility Na | me: | St Joseph Sa | ıni Landfill | | | | |
| Weather cond | litions fo | r the past 10 days:0 | 0.96 inches | Permit Nur | nber: | MO0109878 | | | | | |
| Drought cond | itions?: N | No drought ☑ ; Pha | ase I □ ; Phase | · II □ ; Phas | e III □ ; Pl | nase IV 🗆 ; Ur | nknown 🗆 | | | | |
| | | | | | | | | | | | |
| Site Location | 1: | | | | | | | | | | |
| | | (Universal Transve | rse Mercator P | rojection, In | Meters | | | | | | |
| Site 01 | Easting | (UTM X): | Northing (UTI | M Y): | | Horizontal Ad | ccuracy: Meters | | | | |
| | 034747 | 0 | 4391701 | | | 8. | | | | | |
| Site 11 | Easting | (UTM X): | Northing (UTI | И Y): | | Horizontal Ac | Meters | | | | |
| | 034758 | 30 | 4391777 | | | 6.0 | | | | | |
| | 001100 | | 1001111 | | | | | | | | |
| Photos: | | | | 1 | | T | ı | | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Pu | rpose | | | |
| 9 | downst | ream T11 | 10 | upstream | T11 | 11 | height of a ban | k | | | |
| | | | | | | | | | | | |
| Photo ID# | P | hoto Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | | |
| 12 | downst | ream T1 | 13 | upstream, | T1 | | | | | | |
| | | | | | | | | | | | |
| Photo ID# | P | hoto Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | | | |
| ☐ Swimming |) | ☐ Skin diving | ☐ SCUBA d | iving | ☐ Tubin | g | ☐ Water Skiin | g | | | |
| ☐ Wind surf | ng | ☐ Kayaking | □ Boating | | □ Wadir | ng | □ Rafting | | | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | ✓ None | of the above | ☐ Other: | | | | |
| Describe: | | | <u> </u> | | • | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| WBID# | 34 | ١9 |
|--------|----|----|
| Site # | | 3 |

Data Sheet B- Site Characterization (Continued)

| Surrounding Conditi | | | Ī | | 1 | |
|----------------------|--------------------|--------------------|----------|-----------------|------------|----------------|
| ☐ City/County parks | ☐ playgrounds | ☑ MDC conservation | | ☐ Urban area | | l Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | | ☐ Nature trails | | s/walkways |
| ☐ Boating accesses | ☐ Fence | ☐ No tresspass sig | ın | ☑ Steep Slope | es 🗹 Oth | er: |
| Comments: | | | | | | |
| | | | Very ste | ep slopes | | |
| | | | | | | |
| | | | | | | • |
| Evidence of Human | Use: | | | | | |
| □ Roads | ☐ Foot path/prints | □ Dock/platform | | ☐ Camping Si | | e swings |
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | □ NPDES Discharg | je | ☐ Fishing Tac | kle Lives | stock watering |
| comments/other: | none | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Substrate: | | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % N | lud/Clay | % Bedrock |
| 30 | 5 | 15 | | | • | 50 |
| Aquatic Vegatation: | | | | | | |
| | | | | | | |
| | None | | | | | |
| | | | | | | |
| | | | | | | |
| Water Characteristic | s: | | | | | |
| Odor: | ☐ Sewage | ☐ Musky | ☐ Chem | ical | ✓ None | ☐ Other: |
| Color: | ☐ Clear | □Green | ☐ Gray | | ☐ Milky | ☑ Other: |
| | | | | | | brown |
| Bottom Deposit: | ☐ Sludge | □ Solids | | ediments | ☑ None | ☐ Other: |
| Surface Deposit: | □ Oil | ☐ Scum | ☑ Foam | | □None | ☐ Other: |

WBID # 349 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature | Distance from | Width (m) | Length (m) | Median Depth (m) | Max Depth (m)

| Channel Feature | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|---------------------------------|-----------------------------------|-----------------|-------------------|---------------------|---------------|
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| | | | | | |
| | cord any additional comments | here.) | | | |
| none | | | | | |
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| | | | | | |
| Please verify that yo complete. | ou have completed all s | ections, checke | ed all applicable | boxes, and that the | form is |
| | | | | | |
| Surveyor's Signature: | Gilisa Gould | | _Date of Survey: | 10/9/2007 | |
| | | | | | |
| Organization: | SES, Inc. | | Position: | Field Team Leader | |

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

| | | | | | | | | | | | | | | | | | | Disso | lved Ox | ygen | | |
|-------------|-----------------|-----------|-----------------|--------------------|-----------------|-----------|-----------------|-------------|-----------------|-----------|-----------------|-----------|-----------------|-----------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | Waterbo | ody ID: | 349 | | | Site #: | 3 | | | | | | | | | Date: | 10.9.07 | | | Time: | 10:45am | |
| | Estimate | ed Chann | nel Incisio | on: | 3.0 | (m) (hei | ght betw | een low b | ank widt | th and wa | iter) | | | | | Di | ssolved | Oxygen: | 4.1 | • | (mg/L) | |
| | 01 | UTM X | : | UTM X). 0347470 |) | 1 | UTM Y: | | 439170 | 1 | • | | OM) 8.2 | (meters) | | | | • | | | (% sat) | |
| | 11 | UTM X | : | 0347580 |) | | UTM Y: | | 439177 | 7 | | +/- | 6 | (meters) | | | | | | | (μS/cm) | |
| | | | | | | | 7 | (meters) | | ength of | - | - | | 150 | (meters) | *** | | • | | | | |
| | (To dete | rmne Le | ngth of F | (each) | | | | | (2 | 20x avera | ge strear | n width) | | | | Wa | ter Temp | perature: | 27.7 | | (°C) | |
| | Fiel | d Staff: | | | | Larissa | Brown ar | nd Gilisa (| Gould | | | | | | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | | 1 | 0 | 2 | | 3 | |)4 | |)5 | | 6 | | 07 | 0 | 8 | 0 | 9 | 10 | J | 11 | <u>l</u> |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.5 | 0.01 | 0.6 | 0.05 | 0.9 | 0.01 | 0.8 | 0.01 | 0.5 | 0.05 | 0.7 | 0.05 | 0.8 | 0.05 | 0.4 | 0.05 | 0.5 | 0.01 | 0.4 | 0.01 | 0.5 | 0.05 |
| 2 | 1.0 | 0.05 | 1.2 | 0.15 | 1.8 | 0.00 | 1.6 | 0.05 | 1.0 | 0.10 | 1.4 | 0.15 | 1.6 | 0.05 | 0.8 | 0.15 | 1.0 | 0.01 | 0.8 | 0.01 | 1.0 | 0.15 |
| 3 | 1.5 | 0.01 | 1.8 | 0.20 | 2.7 | 0.00 | 2.4 | 0.00 | 1.5 | 0.10 | 2.1 | 0.25 | 2.4 | 0.01 | 1.2 | 0.15 | 1.5 | 0.05 | 1.2 | 0.01 | 1.5 | 0.25 |
| 4 | 2.0 | 0.01 | 2.4 | 0.25 | 3.6 | 0.00 | 3.2 | 0.00 | 2.0 | 0.05 | 2.8 | 0.30 | 3.2 | 0.00 | 1.6 | 0.15 | 2.0 | 0.01 | 1.6 | 0.00 | 2.0 | 0.20 |
| 5 | 2.5 | 0.05 | 3.0 | 0.25 | 4.5 | 0.01 | 4.0 | 0.00 | 2.5 | 0.05 | 3.5 | 0.40 | 4.0 | 0.00 | 2.0 | 0.15 | 2.5 | 0.05 | 2.0 | 0.15 | 2.5 | 0.15 |
| 6 | 3.0 | 0.05 | 3.6 | | | | 4.8 | 0.00 | | | | | 4.8 | 0.00 | 2.4 | 0.20 | 3.0 | | 2.4 | 0.05 | 3.0 | |
| 7 | 3.5 | 0.05 | 4.2 | | | 0.05 | 5.6 | 0.05 | 3.5 | | 4.9 | 0.25 | 5.6 | 0.00 | | | 3.5 | | 2.8 | 0.05 | 3.5 | 0.10 |
| 8 | 4.0 | 0.05 | 4.8 | | | 0.05 | 6.4 | 0.15 | 4.0 | | | | | 0.20 | | | 4.0 | | 3.2 | 0.05 | 4.0 | 0.10 |
| 9 | 4.5 | 0.01 | 5.4 | | | 0.01 | 7.2 | 0.01 | 4.5 | | 6.3 | | 7.2 | 0.10 | | | 4.5 | | 3.6 | 0.01 | 4.5 | 0.05 |
| ight Bank | 5.0 | 0.00 | 6.0 | 0.00 | 9.0 | 0.00 | 8.0 | 0.00 | 5.0 | 0.00 | 7.0 | 0.00 | 8.0 | 0.00 | 4.0 | 0.00 | 5.0 | 0.00 | 4.0 | 0.00 | 5.0 | 0.00 |
| eature Type | rif | fle | ро | ool | рс | ool | rit | ffle | ро | ool | рс | ool | p | ool | po | ol | rif | fle | riffle pool | | ol | |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: Gilisa Gould Date: 11.08.0/ | Signed: Gilisa Gould Date: 11.08.07 | |
|-------------------------------------|-------------------------------------|--|
|-------------------------------------|-------------------------------------|--|

| WBID# | 349 |
|--------|-----|
| Site # | 4 |

Data Sheet B-Site Characterization

| Date & Time: | | 10.9.07 | 12:30 | Site Location Description (e.g. road crossing): | | | | | | |
|---------------|------------|---------------------|-----------------|---|---|----------------|----------------|--------|--|--|
| Personnel: | | L. Brown and G. G | Sould | Hwy ff crossing | | | | | | |
| Current Weat | her Cond | ditions: clear | | Facility Na | Facility Name: St. Joseph Sani Landfill | | | | | |
| Weather cond | ditions fo | r the past 10 days: | 0.96 inches | Permit Nur | nber: | MO0109878 | | | | |
| Drought cond | itions?: N | No drought ☑ ; Pha | ase I □ ; Phase | · II □ ; Phas | e III □ ; Pl | hase IV □ ; Ur | nknown 🗆 | | | |
| | | | | | | | | | | |
| Site Location | 1: | | | | | | | | | |
| | | (Universal Transve | rse Mercator P | rojection, In | Meters | | | | | |
| Site 01 | Easting | (UTM X): | Northing (UTI | M Y): | | Horizontal Ad | ccuracy: | Meters | | |
| | 035018 | 9 | 4390569 | | | | | 4.6 | | |
| Site 11 | Easting | (UTM X): | Northing (UTI | M Y): | | Horizontal Ac | ccuracy: | Meters | | |
| | 035035 | 50 | 4390576 | | | | | 5.2 | | |
| | 000000 | | 1000010 | | | | | | | |
| Photos: | Ī | | 1 | 1 | | 1 | 1 | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo P | urpose | | |
| 14 | downst | ream, T1 | 15 | upstream, | T1 | 16 | downstream, 7 | Γ11 | | |
| | | | | | | | | | | |
| Photo ID# | Р | hoto Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo P | urpose | | |
| 17 | upstrea | m, T11 | | | | | | | | |
| | | | | | | | | | | |
| Photo ID# | Р | Photo Purpose | Photo ID# | Photo Purpose | | Photo ID# | Photo Purpose | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | | |
| ☐ Swimming |) | ☐ Skin diving | □ SCUBA d | iving | ☐ Tubin | g | ☐ Water Skiing | | | |
| ☐ Wind surf | ing | ☐ Kayaking | □ Boating | | □ Wadir | ng | ☐ Rafting | | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | ☑ None | | of the above | ☐ Other: | | | |
| Describe: | | | <u> </u> | | • | | • | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| WBID# | 349 |
|--------|-----|
| Site # | 4 |

Data Sheet B- Site Characterization (Continued)

| Data Sheet B- Site Characterization (Continued) | | | | | | | | | | |
|--|--------------------------------|------------------------------------|------------|---------|---------|----------------------|--|--|--|--|
| | | | | | | | | | | |
| Surrounding Condition | | | | | | | | | | |
| ☐ City/County parks | ☐ playgrounds | ☐ MDC conservation la | | | | Residential | | | | |
| ☐ Campgrounds | ☐ State parks | ☐ National Forests | ☐ Nature | | | /walkways | | | | |
| ☐ Boating accesses | ☐ Fence | ☐ No tresspass sign | ☐ Steep | Slopes | ☐ Othe | r: | | | | |
| Comments: | | | | | | | | | | |
| none | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| = ::: | | | | | | | | | | |
| Evidence of Human | | 1 — | 1 | 0.11 | 1 | | | | | |
| ☐ Roads | ☐ Foot path/prints | ☐ Dock/platform | ☐ Campi | | ☐ Rope | | | | | |
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | ☐ NPDES Discharge | ☐ Fishing | Tackle | ☐ Lives | tock watering | | | | |
| | none | | | | | | | | | |
| comments/other: | HOHE | | | | | | | | | |
| comments/other: | none | | | | | | | | | |
| comments/other: | none | | | | | | | | | |
| comments/other: | none | | | | | | | | | |
| comments/other: | none | | | | | | | | | |
| | Tione | | | | | | | | | |
| Substrate: | | % Sand %: | Silt | % Mud/0 | ∩lav | % Bedrock | | | | |
| | % Gravel | % Sand % 50 | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: | | | Silt 50 | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: % Cobble | | | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: | | | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: % Cobble | % Gravel | 50 | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: % Cobble | | 50 | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: % Cobble | % Gravel | 50 | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: % Cobble | % Gravel | 50 | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: % Cobble | % Gravel horsetail reed on ba | 50 | | % Mud/0 | Clay | % Bedrock | | | | |
| Substrate: % Cobble Aquatic Vegatation: Water Characteristic | % Gravel horsetail reed on ba | 50 g | 50 | | , | | | | | |
| Substrate: % Cobble Aquatic Vegatation: Water Characteristic Odor: | % Gravel horsetail reed on ba | 50 sanks | chemical | ☑ 1 | None | % Bedrock | | | | |
| Substrate: % Cobble Aquatic Vegatation: Water Characteristic | % Gravel horsetail reed on ba | 50 g | chemical | ☑ 1 | , | □ Other: | | | | |
| Substrate: % Cobble Aquatic Vegatation: Water Characteristic Odor: | % Gravel horsetail reed on ba | 50 € anks □ Musky □ C □ Green □ G | chemical | | None | □ Other: ☑ Other: | | | | |

WBID # 349 Site # 4

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature | Distance from | Width (m) | Length (m) | Median Depth (m) | Max Depth (m)

| Channel Feature | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|-----------------|-----------------------------------|-----------------|------------------|---------------------|---------------|
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| one | cord any additional comments I | nere.) | | | |
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| | | | | | |
| | u have completed all so | ections, checke | d all applicable | boxes, and that the | form is |

Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

| | | | | | | | | | | | | | | | | | | Disso | lved Ox | ygen | | |
|---------------------|---|---|----------------------|-----------|-----------------|-----------|-----------------|-------------|-----------------|-----------------------|-----------------|-----------|-----------------|-----------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | Waterbo | ody ID: | 349 | | • | Site #: | 4 | | · | | | | | | | Date: | 10.9.07 | | | Time: | 12:50 | |
| | Estimated Channel Incision: 2.0 (m) (height between low bank width and water) | | | | | | | | | | | | | | 6.1 | • | (mg/L) | | | | | |
| | | | • | | | • | | izontal Ac | • | | • | | OM) | | | | | • | | | | |
| | | 01 UTM X: 0350189 UTM Y: 4390569 +/- 4.6 (meters) 11 UTM X: 0350350 UTM Y: 4390576 +/- 5.2 (meters) | | | | | | | | | Di | ssolved (| Oxygen: | (% sat) | | | | | | | | |
| | | | | | | • | | | | | 1 | | | | , | | Specifi | c Cond: | | | (µS/cm) | |
| | | | Width: ength of I | Reach) | | 5 | | (meters) | | ength of 20x avera | • | - | 150 | | (meters) | Wa | ter Temp | erature: | 21.9 | | (°C) | |
| | | | _ | | | | D | 1.671 | · | | | | | | | | • | • | | | | |
| | Fiel | d Starr: | - | | | Larissa | Brown a | nd Gilisa (| Jould | | | | | • | | | | | | | | |
| | | | 1 | | | | ı | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 0 | 1 | 0 | 2 | 0 |)3 | (| 04 | 0 | 5 | 0 | 6 | (| 07 | 0 | 8 | 0 | 9 | 10 | ð | 11 | |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.4 | 0.05 | 0.7 | 0.05 | 0.7 | 0.05 | 0.5 | 0.05 | 0.4 | 0.05 | 0.7 | 0.01 | 0.5 | 0.01 | 0.3 | 0.05 | 0.5 | 0.05 | 0.8 | 0.05 | 0.3 | 0.01 |
| 2 | 0.8 | 0.10 | 1.4 | 0.30 | 1.4 | 0.35 | 1.0 | 0.25 | 0.8 | 0.05 | 1.4 | 0.10 | 1.0 | 0.05 | 0.6 | 0.20 | 1.0 | 0.30 | 1.6 | 0.20 | 0.6 | 0.05 |
| 3 | 1.2 | 0.05 | 2.1 | 0.65 | 2.1 | 0.70 | 1.5 | 0.35 | 1.2 | 0.15 | 2.1 | 0.05 | 1.5 | 0.01 | 0.9 | 0.20 | 1.5 | 0.30 | 2.4 | 0.40 | 0.9 | 0.05 |
| 4 | 1.6 | 0.05 | 2.8 | 0.95 | 2.8 | 0.65 | 2.0 | 0.30 | 1.6 | 0.25 | 2.8 | 0.01 | 2.0 | 0.01 | 1.2 | 0.15 | 2.0 | 0.25 | 3.2 | 0.55 | 1.2 | 0.10 |
| 5 | 2.0 | 0.15 | 3.5 | 1.00 | 3.5 | 0.70 | 2.5 | 0.25 | 2.0 | 0.40 | 3.5 | 0.00 | 2.5 | 0.05 | 1.5 | 0.15 | 2.5 | 0.20 | 4.0 | 0.60 | 1.5 | 0.10 |
| 6 | 2.4 | 0.20 | 4.2 | 1.00 | 4.2 | 0.70 | 3.0 | 0.20 | 2.4 | 0.35 | 4.2 | 0.00 | 3.0 | 0.10 | 1.8 | 0.10 | 3.0 | 0.15 | 4.8 | 0.40 | 1.8 | 0.10 |
| 7 | 2.8 | 0.20 | 4.9 | 1.00 | 4.9 | 0.55 | 3.5 | 0.10 | 2.8 | 0.30 | 4.9 | 0.05 | 3.5 | 0.15 | 2.1 | 0.05 | 3.5 | 0.10 | 5.6 | 0.15 | 2.1 | 0.10 |
| 8 | 3.2 | 0.15 | 5.6 | 0.95 | 5.6 | 0.35 | 4.0 | 0.05 | 3.2 | 0.15 | 5.6 | 0.20 | 4.0 | 0.10 | 2.4 | 0.05 | 4.0 | 0.05 | 6.4 | 0.20 | 2.4 | 0.10 |
| 9 | 3.6 | 0.05 | 6.3 | 0.90 | 6.3 | 0.10 | 4.5 | 0.05 | 3.6 | 0.15 | 6.3 | 0.10 | 4.5 | 0.01 | 2.7 | 0.01 | 4.5 | 0.05 | 7.2 | 0.05 | 2.7 | 0.05 |
| ight Bank | 4.0 | 0.00 | 7.0 | 0.00 | 7.0 | 0.00 | 5.0 | 0.00 | 4.0 | 0.00 | 7.0 | 0.00 | 5.0 | 0.00 | 3.0 | 0.00 | 5.0 | 0.00 | 8.0 | 0.00 | 3.0 | 0.00 |
| eature Type | | ra . | | | | | | 1 | | | | | | 1 | | 1 | | 1 | | 1 | | |
| iffle, run, or pool | r pool riffle pool | | ffle pool pool pool | | | 100 | 100 | po | ool | po | ool | p | ool | po | Ol | pool pool | | | 01 | po | DI . | |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: gilisa gould Date: 11.08.07 | |
|-------------------------------------|--|
|-------------------------------------|--|



Site# 1 Photo ID# 5, Upstream



Site# 2 Photo ID# 7, Upstream



Site# 1 Photo ID# 6, Downstream



Site# 2 Photo ID# 8, Downstream



Site# 3 Photo ID# 9, Downstream



Site# 3 Photo ID# 11, Height of stream



Site# 3 Photo ID# 10, Upstream



Site# 3 Photo ID# 12, Downstream



Site# 3 Photo ID# 13, Upstream



Site# 4 Photo ID# 15, Upstream



Site# 4 Photo ID# 14, Downstream



Site# 4 Photo ID# 16, Downstream



Site# 4 Photo ID# 17, Upstream